

Rec'd PCT/PTO 24 JUN 2005

10/540759

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/058814 A1

(51) International Patent Classification⁷: C07K 14/415,
C07H 21/04, C12N 15/63, 15/82

Albert Road, Mt Albert (NZ). MATICH, Adam [AU/NZ];
HortResearch, Tennent Drive, Palmerston North (NZ).

(21) International Application Number:
PCT/NZ2003/000294

(74) Agents: ADAMS, Matthew, D., et al.; A J Park, 6th Floor
Huddart Parker Building, Post Office Square, PO Box 949,
6015 Wellington (NZ).

(22) International Filing Date:
24 December 2003 (24.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
523384 24 December 2002 (24.12.2002) NZ

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,
CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): THE
HORTICULTURE AND FOOD RESEARCH INSTI-
TUTE OF NEW ZEALAND LIMITED [NZ/NZ]; Mt
Albert Research Centre, 120 Mt Albert Road, Mt Albert
(NZ).

(84) Designated States (*regional*): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): GREEN, Sol
[NZ/NZ]; 3/3 Park Ave, Takapuna (NZ). FRIEL, Ellen
[GB/NZ]; 8/23B Western Springs Road, Western Springs,
Auckland (NZ). BEUNING, Lesley [NZ/NZ]; 11 Meryl
Avenue, Huapai (NZ). MACRAE, Elspeth [NZ/NZ];
The Horticulture and Food Research Institute of New
Zealand Limited, Mt Albert Research Centre, 120 Mt

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ENZYMES AND POLYNUCLEOTIDES ENCODING THE SAME

(57) Abstract: The invention relates to a multifunctional germacrene-D synthase and a polynucleotide encoding it. Included also are genetic constructs, transgenic organisms, plant selection methods and biofermentation methods. The enzyme may be used to prepare germacrene-D and/or other sesquiterpenes such as germacrene-D, delta-cadinene, gamma-cadinene, gamma-murolene, gamma-elemene, delta-elemene, elemol or germacrene-B.

WO 2004/058814 A1